

Application No. 09/990,492
Amendment Dated March 18, 2004
In Reply to USPTO Office Action Dated March 2, 2004
PPG Docket No.: 1710A1/RC

CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (previously presented) A coating composition comprising a mixture of:
- a. a first component comprising a phenolic resin, an acid, and a solvent;
 - and
 - b. a second component comprising an alkoxysilane,
- wherein the first component and the second component are mixed immediately prior to application of the composition to a substrate.

Claim 2 (canceled).

3. (original) A coating composition according to claim 1 in which the alkoxy group of the alkoxysilane contains from 1 to 6 carbon atoms.

4. (currently amended) A coating composition according to claim 12 wherein said alkoxysilane is an epoxy functional alkoxysilane.

5. (previously presented) A coating composition according to claim 1 wherein said acid is selected from the group consisting of tannic acid, phosphoric acid, citric acid, and gallic acid and mixtures thereof.

Claims 6-8 (canceled).

9. (original) A coating composition according to claim 1 wherein said phenolic resin is prepared by condensing a phenolic material with an aldehyde.

10. (original) The coating composition of claim 9 wherein the phenolic material is phenol.

11. (original) The coating composition of claim 9 wherein the aldehyde is formaldehyde.

12. (original) A coating composition according to claim 1 wherein said phenolic resin has an aromaticity between 0 and 80 percent.

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13. (original) A coating composition according to claim 1 wherein said phenolic resin is present in an amount ranging from 0.1 to 99.8 percent by weight based on the total weight of the coating composition.

14. (original) A coating composition according to claim 1 wherein said alkoxysilane is present in an amount ranging from 0.1 to 99.8 percent by weight based on the total weight of the coating composition.

15. (original) A coating composition according to claim 1 wherein said acid is present in an amount ranging from 0.1 to 99.8 percent by weight based on the total weight of the coating composition.

16. (currently amended) A coating composition comprising a mixture of:

- a. a first component comprising from 0.1 to 99.8 percent by solid weight of a phenolic resin, from 0.1 to 99.8 percent by solid weight of an acid ~~selected from the group comprising tannic, phosphoric, citric and gallic acids~~, and a solvent; and
- b. a second component comprising from 0.1 to 99.8 percent by solid weight of an epoxy functional alkoxysilane;

whereby the percents by weight are based on the total solid weight of the composition, and wherein the first component and the second component are mixed immediately prior to application of the composition to a substrate.

Claim 17 (canceled).

18. (original) The coating composition of claim 16 wherein the alkoxy groups of the alkoxysilane contain from 1 to 6 carbon atoms.

19. (previously presented) The coating composition of claim 16 wherein the acid is selected from the group consisting of tannic acid, phosphoric acid, citric acid, and gallic acid and mixtures thereof.

20. (original) The coating composition of claim 12 wherein the phenolic resin has an aromaticity between 15 and 80 percent.

21. (previously presented) A coating composition comprising a mixture of:
- a. a first component comprising from 0.1 to 99.8 percent by weight of a phenolic resin having an aromaticity between 15 and 80 percent, from 0.1 to 99.8 percent by weight of an acid selected from the group consisting of tannic, phosphoric, citric and gallic acids and mixtures thereof, and a solvent; and
 - b. a second component comprising from 0.1 to 99.8 percent by weight of an epoxy functional silane in which the alkoxy groups contain from 1 to 6 carbon atoms,
- whereby the percents by weight are based on total solid weight of the composition, and wherein the first component and the second component are mixed immediately prior to application of the composition to a substrate.

Claims 22-31 (canceled).

32. (withdrawn) A coated substrate coated with a coating composition comprising:
- a. a phenolic resin;
 - b. an alkoxysilane; and
 - c. an acid.
33. (withdrawn) A coated substrate according to claim 32 wherein the substrate is cold rolled steel, electrogalvanized steel, or aluminum.
34. (withdrawn) A coated substrate derived from the coating composition of claim 16.
35. (withdrawn) A method for coating a substrate comprising the following steps:
- a. applying a controlled thickness of a coating composition comprising a phenolic resin, an alkoxy silane, and an acid;
 - b. applying a primer coating over the coating applied in step (a); and
 - c. applying a topcoat over the coating applied in step (a) or in optional step (b).
36. (withdrawn) A method for coating a substrate according to claim 35 wherein the alkoxysilane is an epoxy functional silane.

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37. (withdrawn) A method for coating a substrate according to claim 35 wherein the acid is tannic acid.

38. (withdrawn) A method for coating a substrate according to claim 35 wherein the phenolic resin is prepared by condensing a phenolic material with an aldehyde.

39. (withdrawn) A method for coating a substrate according to claim 35 wherein said phenolic resin is present in an amount ranging from 0.1 to 99.8 percent by weight based on the total weight of the coating composition.

40. (withdrawn) A method for coating a substrate according to claim 35 wherein said alkoxysilane is present in an amount ranging from 0.1 to 99.8 percent by weight based on the total weight of the coating composition.

41. (withdrawn) A method for coating a substrate according to claim 35 wherein said acid is present in an amount ranging from 0.1 to 99.8 percent by weight based on the total weight of the coating composition.

Claims 42-53 (canceled).

54. (previously presented) The coating composition of claim 1, wherein the second component further comprises a solvent.

55. (previously presented) The coating composition of claim 1, wherein the phenolic resin, the alkoxysilane and the acid comprise no more than about 10 weight percent based on the total weight of the coating composition.

56. (previously presented) The coating composition of claim 1, wherein the alkoxysilane is selected from the group consisting of acryloxyalkoxysilanes, vinyl alkoxysilanes, ethylenically unsaturated acyloxysilanes, mercapto functional silanes, and amino functional silanes.

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57. (previously presented) The coating composition of claim 54, wherein the amounts of phenolic resin, acid, and solvent in the first component and the amounts of the alkoxysilane and solvent in the second component are selected to result in an applied coating film with a dry film thickness of no more than about 0.1 mils.

58. (previously presented) The coating composition of claim 16, wherein the second component further comprises a solvent.

Claim 59 (canceled).

60. (previously presented) The coating composition of claim 21, wherein the second component further comprises a solvent.

Claim 61 (canceled).